THE SCIENCE OF RESEARCH ON RACIAL/ETHNIC DISCRIMINATION AND HEALTH

Methods for the Scientific Study of Discrimination and Health: An Ecosocial Approach

Nancy Krieger, PhD

TWO DECADES AGO, IN 1992, the US Centers for Disease Control and Prevention sponsored a groundbreaking meeting on racism, Black women, and the risk of preterm delivery. At the time, despite centuries of debate over the causes of racial/ethnic inequalities in health, scant scientific research had explicitly and rigorously investigated whether—and if so, how—racial discrimination harms health. Just over a decade later, in 2003, the National Institutes of Health held its first-ever meeting on the subject, Racial/Ethnic Bias and Health, the same year the Institute of Medicine published its first major report on racial discrimination in health care. Since then, studies on discrimination and health have burgeoned, with new evidence prompting new controversies about both concepts and methods, singly and combined.

Amidst all the debate and new findings, one point stands out: the scientific study of how discrimination harms health requires theoretically grounded methods. In this article, I accordingly discuss key conceptual issues relevant to research on racism and health and their methodological implications for testing hypotheses about how racial discrimination, as one form of societal injustice, becomes embodied inequality—and hence manifested as health inequities. Although my focus is on racial discrimination and health in the United States, the concerns raised are pertinent for any type of discrimination in any country context.

METHODS REQUIRE THEORY AND CONTEXT

Because choice of methods depends on the hypotheses being tested, which in turn depend on the theoretical frameworks employed, rigorous scientific research requires transparency about both theories and methods. The theory I draw on is the ecosocial theory of disease distribution, which concerns who and what drive social inequalities in health. The box on the following page shows the theory’s key constructs and core propositions. A central focus is on how we literally biologically embody social inequalities in health, the period and spatial expanse in which they occur, and the intersection of the two domains—past and present—providing a framework and guide analysis of the phenomena.

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To guide both the research questions posed and the methods used, ecosocial theory posits that inequitable race relations simultaneously—and not sequentially—benefit the groups who claim
Ecosocial Theory: Core Constructs and Core Propositions

Core constructs

1. Embodiment: referring to how we literally incorporate, biologically, in societal and ecological context, the material and social world in which we live.
2. Pathways of embodiment: via diverse, concurrent, and interacting pathways, involving adverse exposure to social and economic deprivation, xenogenous harms (e.g., toxic substances, pathogens, and hazardous conditions), social trauma (e.g., discrimination and other forms of mental, physical, and sexual trauma), targeted marketing of harmful commodities (e.g., tobacco, alcohol, other licit and illicit drugs), inadequate or degrading health care; and degradation of ecosystems, including as linked to alienation of Indigenous populations from their lands.
3. Cumulative interplay of exposure, susceptibility, and resistance across the life course: referring to the importance of timing and accumulation of, plus responses to, embodied exposures, involving gene expression, not simply gene frequency.
4. Accountability and agency: both for social disparities in health and research to explain these inequities.

Core propositions

1. People literally embody, biologically, their lived experience, in societal and ecologic context, thereby creating population patterns of health and disease.
2. Societies’ epidemiological profiles are shaped by the ways of living afforded by their current and changing societal arrangements of power, property, and the production and reproduction of both social and biological life, involving people, other species, and the biophysical world in which we live.
3. Determinants of current and changing societal patterns of disease distribution, including health inequities, are (a) exogenous to people’s bodies, and (b) manifest at different levels and involve different spatiotemporal scales, with macro-level phenomena more likely to drive and constrain meso- and microlevel phenomena than vice versa; to the extent genes are relevant to societal distributions of disease, at issue is gene expression, not gene frequency.
4. In societies exhibiting social divisions based on property and power, and in which those with the most power and resources constitute a small percentage of the population, the more prevalent the health outcome, the greater the absolute burden (and potentially the relative burden) on those with less power and fewer resources, because they constitute the majority of the population; a corollary is that for more rare or infrequent (nonendemic) diseases, it cannot be presumed, in advance, whether social inequalities in the outcome exist, and, if they do, the direction of the gradient.
5. Explanations of disease distribution cannot be reduced solely to explanations of disease mechanisms, because the latter do not account for why rates and patterns change, in complex ways, over time and place.
6. Practice of a reflexive epidemiology that situates in broader societal context an investigation’s motivating theories, hypotheses, methods of analysis, and interpretation of findings will improve the likelihood of epidemiologists being better positioned to understand and convey the meanings and limitation of our study results and explanations for population patterns of health, disease, and well-being.

Source: Krieger.17 (pp114-215)

Historical context in turn determines which pathways matter and are operative, at what level and at what point in the life course. To provide context, indicators of the current sociopolitical and economic conditions23-30 are provided in Tables 1 to 3. Data are presented on (1) well-known stark US racial/ethnic inequities in economic and political power23-28 and health status28 (albeit well known chiefly to academics, but not to much of the US public29) and (2) disparate views on discrimination, whereby in 2010 fully 48% of the US White population agreed with the statement, “Today discrimination against Whites has become as big as a problem as discrimination against Blacks and other minorities,” although 70% of Black respondents and 68% of Hispanics disagreed.30 The complex connections—and disconnections—between evidence and awareness are, in accordance with ecosocial theory’s attention to accountability and agency, key to framing analysis of and interventions to address health inequities,29 including
the impact of racial discrimination on health.

**THE SCIENCE OF RESEARCH ON RACIAL/ETHNIC DISCRIMINATION AND HEALTH**

**Racism: exploitative & oppressive societal relations**

- race/ethnicity: social construct premised on domination, cultural heritage, arbitrary physical traits
- racialized expressions of biology (e.g., skin color)
- benefits: dominant social groups
- harms: social groups subjected to discrimination
- biological expressions of racism
- institutional racism and health primarily focuses on present day de facto discriminatory policies and practices, chiefly in relation to (1) health care systems, and (2) residential, educational, and (to a lesser extent) occupational segregation.

**RACISM & HEALTH: DOMAINS, LEVELS & LIFECOURSE**

- Pathways of embodiment
- Levels: societal & ecosystem
- Life course:
  - in utero
  - infancy
  - childhood
  - adulthood

**Ecosocial illustration of how racism, understood as an exploitative and oppressive social relationship that simultaneously defines racial/ethnic groups and causes racial/ethnic social inequalities that become embodied as racial/ethnic health inequities, via the specified pathways, operating at diverse levels and spatiotemporal scales, in historical context.**

Source. Krieger.7,17,18

**FIGURE 1—Ecosocial theory: schematic illustration as applied to analyzing the embodiment of racial inequality and its implications for health inequities.**

METHODOLOGICAL CHALLENGES FOR ANALYZING STRUCTURAL DETERMINANTS

A major challenge is to develop rigorous methods to study the health impact of structural determinants of racial inequality, including laws; institutional policies and practices; national, regional, state, and local economic and political infrastructures; and neighborhood and workplace conditions. At issue is the substantive content of variables deployed and not simply whether multilevel, life course, or birth cohort methods are used.

State-sanctioned discrimination, past and present, is of particular concern. Not surprisingly, because the federal government abolished legal (i.e., de jure) racial discrimination in the mid-1960s, most contemporary US research on health studies, with their typical focus on the noninstitutionalized civilian population, in turn means that most research findings likely underestimate the extent of—and contribution of racial discrimination to—racial/ethnic health inequities.

Nor is history dead within us. As ecosocial theory clarifies, measuring only contemporary exposure is likely to dilute estimates of the impact of racial discrimination on health. A case in point is the mid-1960s abolition of US Jim Crow laws—i.e., laws enacted in the late 19th and early 20th centuries that sanctioned legal racial discrimination (predominantly against Black Americans, but also affecting American Indians, Latinos, and Asian Americans) in voting, education, employment, health care, housing, the legal system, and use of public facilities, spaces, services, and transportation. In light of mounting evidence of the importance of early life conditions and cumulative disadvantage for both adult health and transgenerational transmission of risk, a reasonable hypothesis is that Jim Crow laws, as well as their abolition, had both immediate and enduring health consequences. In 2011, all US-born persons aged 65 years and older (i.e., the age group in which the bulk of mortality occurs) were born, came of age, and had already lived the first 20 years of their lives, and perhaps had their first child, when Jim Crow was legal in 21 out of 50 states plus the District of Columbia, with de facto discrimination in the remaining 29 states.

Yet, to date, scant research has investigated the impact of Jim Crow laws—or their abolition—for present-day racial/ethnic health disparities. Two sets of findings suggest that such analyses may be useful. First, hinting at...
### TABLE 1—Analyzing US Racial/Ethnic Health Inequities in Context: Relevant Socioeconomic, Sociopolitical, and Embodied Facts

<table>
<thead>
<tr>
<th>Racial/Ethnic Inequity Indicators</th>
<th>Total US Population</th>
<th>White Non-Hispanic</th>
<th>Asian$^a$</th>
<th>Hispanic</th>
<th>Black Non-Hispanic$^b$</th>
<th>American Indian/Alaska Native</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wealth (2004): median household assets,$^{21}$ $^\star$</td>
<td>79,800</td>
<td>113,822</td>
<td>107,690</td>
<td>13,375</td>
<td>8,650</td>
<td>...</td>
</tr>
<tr>
<td>Poverty (2009),$^{22,24}$ %</td>
<td>14.3</td>
<td>9.4</td>
<td>12.5</td>
<td>25.3</td>
<td>25.8</td>
<td>25.3 (2006-2008)</td>
</tr>
<tr>
<td>Unemployed (2009),$^{24}$ %</td>
<td>9.3</td>
<td>8.5</td>
<td>7.3</td>
<td>12.1</td>
<td>14.8</td>
<td>...</td>
</tr>
<tr>
<td>Incarceration of men (2008),$^{25}$ per 100,000 population</td>
<td>1403</td>
<td>727</td>
<td>...</td>
<td>1,760</td>
<td>11,137</td>
<td>...</td>
</tr>
<tr>
<td>Political parity ratio (2004),$^{26}$ % in political office/% in population</td>
<td>...</td>
<td>Men, 2.28</td>
<td>Men, 0.53</td>
<td>Men, 0.49</td>
<td>Men, 0.84</td>
<td>...</td>
</tr>
<tr>
<td>Congress</td>
<td>...</td>
<td>Women, 0.30</td>
<td>Women, 0.00</td>
<td>Women, 0.21</td>
<td>Women, 0.33</td>
<td>...</td>
</tr>
<tr>
<td>State legislatures</td>
<td>...</td>
<td>Women, 2.04</td>
<td>Women, 0.41</td>
<td>Women, 0.34</td>
<td>Women, 0.89</td>
<td>...</td>
</tr>
<tr>
<td>No health insurance (2009),$^{25,26}$ %</td>
<td>16.7</td>
<td>12.0</td>
<td>17.2</td>
<td>32.4</td>
<td>21.0</td>
<td>33.0</td>
</tr>
<tr>
<td>Infant mortality rate (2006),$^{25}$ per 1000 live births</td>
<td>6.7</td>
<td>5.6</td>
<td>4.5</td>
<td>3.4</td>
<td>13.4</td>
<td>8.3</td>
</tr>
<tr>
<td>Person-years lost before 75 years of age (2007)$^{25}$</td>
<td>7083.5</td>
<td>6736.5</td>
<td>3404.9</td>
<td>5447.4</td>
<td>11,259.8</td>
<td>8463.6</td>
</tr>
<tr>
<td>Self-reported fair or poor health status (2009),$^{25}$ %</td>
<td>9.9</td>
<td>8.0</td>
<td>8.4</td>
<td>13.3</td>
<td>14.2</td>
<td>16.3</td>
</tr>
<tr>
<td>Severe psychological distress (2008-2009),$^{25,26}$ %</td>
<td>3.2</td>
<td>3.2</td>
<td>1.1</td>
<td>3.7</td>
<td>3.8</td>
<td>...</td>
</tr>
</tbody>
</table>

Note. Ellipses indicate data not reported, which is indicative of imposed invisibility and is an informative social fact characterizing social context.

$^{a}$Economic data and data on self-reported health and psychological distress are for Asians only; all other health data reported for Asians and Pacific Islanders combined.

$^{b}$Person-years of life lost before 75 years of age are reported for Black only; all other data for the Black non-Hispanic population.

$^{c}$Serious psychological distress in past 30 days among adults aged 18 years and older, as measured by the Kessler 6 scale (range = 0–24; severe psychological distress ≥ 13).

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The science of research on racial/ethnic discrimination and health

Krieger

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**CHALLENGES INVOLVING INDIVIDUALS INVOLVING INDIVIDUALS IN THE CONTEXT OF STRENGTH OF SOCIAL MECHANISMS AND SPATIOTEMPORAL SCALE**

Study of structural determinants is essential for analyzing how racial/ethnic health equities arise or come about. Structural determinants are not just factors of biological or social origin but also historical and institutional factors that shape the conditions in which people live. The historical context of structural determinants includes the legacy of slavery, lynching, and segregation, as well as the more recent experience of the civil rights movement and the passage of the Civil Rights Act of 1964 and the Voting Rights Act of 1965.

**METHODOLOGICAL APPROACHES**

There are two distinct approaches to analyzing the effects of structural determinants on health:

1. **Individual Explicit (Self-Report) Data**
   - **Domains covered:** Two domains are covered (1) treatment and (2) the major social determinant of health: socioeconomic status.
   - **Types of instruments:** The instruments used are the Everyday Discrimination Scale (EDS), which assesses experiences of discrimination, and the Social Determinants of Health (SDH) scale, which assesses the social determinants of health.
   - **Examples of interactions:** Examples of interactions include (1) exposure to diverse domains and (2) measurement of both individual and group-level factors.

2. **Group Levels and Context**
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**Group Levels and Context**

**Domains covered:** The domains covered are (1) treatment and (2) the major social determinant of health: socioeconomic status.

- **Examples of interactions:** Examples of interactions include (1) exposure to diverse domains and (2) measurement of both individual and group-level factors.
and accountability: the occurrence of discrimination in diverse domains, such as discrimination at work, in housing, and in education, is legally actionable, and knowing where discrimination occurs, as opposed to treating it only as a free-floating psychosocial stressor, is relevant to ending it.

**Nativity matters.** Nativity is important not only because of growing anti-immigrant discrimination, but also because, if, indeed, “race” is a social construct—a premise informing much of the research on racial discrimination and health—then it follows that people born and raised outside of the United States have to learn how race is produced here and what US racial discrimination is like.

Tellingly, research indicates that recent US immigrants of color are the least likely to report having experienced racial discrimination, despite their greater likelihood of encountering discrimination based on language. The robust body of work on the healthy immigrant effect further indicates that, at least for the first generation, immigrants typically have better health than their US-born counterparts. Yet, to date, few US investigations on racial discrimination and health—apart from those explicitly focused on immigration status—routine take nativity into account in their analyses. This omission, however, can lead to underappreciated serious problems:

- Misleading estimates of the prevalence of exposure, because estimates derived from analyses that lump together the US-born and foreign-born population without regard for nativity can obscure the higher self-reported burden among the US-born population;
- Biased estimates (and most likely underestimates) of the association between racial discrimination and health, whether attributable to confounding (i.e., lack of control for nativity), effect modification (at a given level of exposure, the exposure–outcome association varies by nativity), or both;
- Inaccurate estimates of the population-attributable fraction (which depends on both the frequency of exposure and magnitude of the exposure–outcome association).

At a time when foreign-born people constitute an ever-higher proportion of most US populations of color, including among Black Americans (upwards of 30% are foreign born in such cities as Boston, New York City, Washington, and Miami), rigorous research on racial discrimination and health must reckon with issues of nativity.

**Direct questions about racial discrimination matter.** Currently, the 2 main approaches used in explicit self-report measures either (1) ask explicitly about racial discrimination in the stem of the question (as in the EOD measure), versus (2) ask first about unfair treatment, and if any is reported, follow up with a question about attribution, for example, to race/ethnicity or something else (as in the EOD measure).

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**TABLE 2—Trends in US Income and Concentration of Wealth**

<table>
<thead>
<tr>
<th>Year</th>
<th>Bottom 20% of US Population by Wealth</th>
<th>Top 20% of US Population by Wealth</th>
<th>Top 5% of US Population by Wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wealth</td>
<td>Mean Income, $</td>
<td>Wealth</td>
</tr>
<tr>
<td>1970</td>
<td>4.1</td>
<td>3064</td>
<td>43.3</td>
</tr>
<tr>
<td>1980</td>
<td>4.2</td>
<td>6411</td>
<td>44.1</td>
</tr>
<tr>
<td>1990</td>
<td>3.8</td>
<td>9833</td>
<td>46.6</td>
</tr>
<tr>
<td>2000</td>
<td>3.6</td>
<td>14 122</td>
<td>49.8</td>
</tr>
<tr>
<td>2009</td>
<td>3.4</td>
<td>15 289</td>
<td>50.3</td>
</tr>
</tbody>
</table>

Note. Wealth is the share of aggregate income received by each fifth and top 5% of households. Mean income is in 2009 dollars according to the US Census. Source. US Census Bureau.

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**TABLE 3—Postelection National Poll Results for Statement on Racial Discrimination, November 3–7, 2010**

<table>
<thead>
<tr>
<th>Population Group</th>
<th>Agree, %</th>
<th>Disagree, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>44</td>
<td>54</td>
</tr>
<tr>
<td>White</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>Tea Party</td>
<td>62</td>
<td>36</td>
</tr>
<tr>
<td>Republican</td>
<td>56</td>
<td>42</td>
</tr>
<tr>
<td>Independent</td>
<td>53</td>
<td>46</td>
</tr>
<tr>
<td>Democrat</td>
<td>30</td>
<td>68</td>
</tr>
<tr>
<td>Black</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>Hispanic</td>
<td>32</td>
<td>68</td>
</tr>
</tbody>
</table>

Source. Jones and Cox.
As has been noted for at least a decade,7,80,86,87 these approaches differ significantly.

Attesting to differences in these 2 approaches, new empirical data from the 2007 California Health Interview Study unambiguously demonstrate—by employing identically phrased questions and a split-sample design80,87—that self-reports of unfair treatment (without any attribution) are much higher—and demonstrate far less racial/ethnic variation—than self-reports of unfair treatment attributed to race/ethnicity and self-reports in response to a 1-stage question that asks directly about racial discrimination.80 By implication, unfair treatment (without attribution) would contribute less to explaining racial/ethnic health disparities and would also underestimate the health impact of racial discrimination. Even so, scientific investigations continue to treat findings arrived at through these 2 different methods as directly comparable.60,62,88,89 The larger issue raised by these findings is whether self-report data are adequate for measuring exposure to racial discrimination.

**Individual Implicit Data**

One of the newer approaches in the racial discrimination and health literature that seek to minimize well-known cognitive problems affecting self-report data is the Implicit Association Test90–94 (IAT; Figure 3), a methodology initially developed to measure prejudice. Motivating its use in health research is the concern that the people most affected by discrimination may be least able or willing to say so, even as such experiences may nevertheless affect their health.7,57 Two lines of empirical evidence support this hypothesis.

First, the phenomenon psychologists refer to as the “person-group discrimination discrepancy” reveals that people typically report more discrimination for their group, on average, than for themselves personally—even though it is not possible for all individuals to experience, on average, less discrimination than their group.93–96 Second, several studies have observed a linear association between discrimination and health among more affluent persons: among groups with fewer resources, risk was higher among respondents who reported no discrimination than among those who reported moderate discrimination, with the highest risk, however, occurring among respondents who reported high exposure (i.e., a J-shaped curve).97–99 Together, these findings imply that self-reports of racial discrimination among exposed groups may underestimate exposure, especially among those with the least resources, even as this exposure can still adversely affect their health; one consequence would be underestimation of the impact of racial discrimination on health.7,18

Tellingly, the first 2 studies to use the IAT to measure racial discrimination have already shown that (1) the implicit measure does not detect the person-group discrimination discrepancy observed with the explicit measure, suggesting that this phenomenon reflects self-presentional bias, and (2) the correlation between implicit and explicit measures is small, implying that they capture different phenomena.91,94

The second study also reported 2 notable health-related findings.94 First, the IAT and the EOD responses were independently associated with risk of hypertension among Black Americans. Second, in models comparing the Black and White participants that controlled for age, gender, socioeconomic position (educational level of the respondent and both parents), body mass index, social desirability, and response to unfair treatment, Black participants remained at significantly higher risk of being hypertensive (odds ratio [OR] = 1.4; 95% confidence interval [CI] = 1.0, 1.9). Their excess risk, however, was effectivly eliminated and rendered statistically nonsignificant (OR = 1.1; 95% CI = 0.7, 1.7) by additionally adjusting for exposure to racial discrimination by using both the IAT and the EOD measure. These preliminary results thus point to the likely utility of health research on discrimination supplementing self-report data with IAT data.

**EMBODYING EXPOSURE TO MULTIPLE TYPES OF DISCRIMINATION**

Further underscoring the need for a more critical and integrated approach to investigating discrimination and health is the ecocsoial inverse hazard law, modeled after Hart’s famous inverse care law,100 which posits that “the accumulation of health hazards tends to vary inversely with the power and resources of the populations affected.”100 At issue is the cumulative embodiment of multiple
types of discrimination, deprivation, and other harmful exposures.

An empirical demonstration of why such an embodied approach is needed is analysis of data from the United for Health study, which recruited predominantly lower-income, employed women and men from diverse racial/ethnic groups, both US-born and foreign-born, from the Greater Boston area during 2003 and 2004. Among members of this study, we documented high exposure to (1) socioeconomic deprivation, (2) occupational hazards (i.e., chemicals, dusts, fumes, and ergonomic strain), (3) social hazards (i.e., racial discrimination, workplace abuse, and sexual harassment at work), and (4) relationship hazards (i.e., intimate partner violence and unsafe sex). Despite being union members, one third of the study participants earned less than a living wage (equal to $10.54/hour at the time of the study) and 40% were below the US poverty line, with the Black and Latino workers nearly twice as likely as Whites to be poor.

Fully 85% of study members reported at least 1 high exposure to occupational hazards in the past year; nearly half (46%) reported 3 or more high exposures, and 17% reported 5 or more high exposures. Although some variation existed by race/ethnicity and gender, the majority of workers in each racial/ethnic-gender group were highly exposed. Simultaneously, more than 85% of the participants reported exposure to at least 1 of the 3 social hazards; exposure to all 3 reached 20% to 30% among the Black workers, the most highly exposed group.

For sexual harassment, an additional social category was relevant: sexuality. Specifically, lesbian, gay, bisexual, and transgender workers reported twice as much sexual harassment as did their heterosexual counterparts. Furthermore, within each racial/ethnic group, about one third of the men reported having ever been a perpetrator of intimate partner violence, and about one third of the women reported having been a target of such violence.

As exemplified by analyses of severe psychological distress, attaining an accurate picture of risk required considering all the social hazards together. Findings revealed that analyses that included data on only 1 type of hazard yielded biased estimates of risk. Moreover, those that included all 3 hazards demonstrated the high toll imposed by racial discrimination, independent of other exposures.

**A RIGOROUS SCIENCE OF RESEARCH ON DISCRIMINATION AND HEALTH**

In conclusion, as the examples provided in this article show, rigorous methods for the scientific study of discrimination and health require (1) conceptual clarity about the exploitative and oppressive realities of racism and other forms of adverse discrimination; (2) careful attention to domains, pathways, and spatiotemporal scale, in historical context; (3) structural-level measures; (4) individual-level measures, albeit without relying solely on self-report data or reducing discrimination to solely a psychosocial exposure; and (5) an embodied analytic approach. After all, we are not one day White or a person of color, another day working class or a professional, still another day a woman or a man or transgendered, on yet another day straight or lesbian, gay, bisexual, or transgendered, and yet another an immigrant versus native born. We are all of these at once—and our research needs to integrate these conjoint social facts the same ways our bodies do, each and every day.

The stakes for getting our science right are high—both scientifically and practically. Use of critical theory–informed methods can help clarify that most extant research is likely to yield conservative, not inflated, estimates of the impact of racial discrimination on health; it can also sharpen the ability to counter fallacious attacks that research on this topic is politically, as opposed to scientifically, correct. Although data by themselves cannot rectify health inequities, the absence of data demonstrating harm nevertheless is itself harmful—and as underscored by the time-worn adage “no data, no problem.” Our responsibility, as public health researchers, is to use the best science possible—conceptually and methodologically—to build public clarity about the extent and health consequences of racial discrimination.

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**FIGURE 3—Implicit Association Test and use for measuring exposure to racial discrimination.**

<table>
<thead>
<tr>
<th>Discrimination:</th>
<th>Target concept categorization</th>
<th>Attribute categorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Against Self (IAT-p)</td>
<td>Me My The</td>
<td>Abuser Racist Bigot</td>
</tr>
<tr>
<td>Against Group (IAT-g)</td>
<td>Them Their Theirs</td>
<td>Target Victim Oppressed</td>
</tr>
</tbody>
</table>

The IAT is a computer-based reaction-time methodology designed to capture phenomena that lie outside of the reaches of introspective access. The test contrasts the time it takes to make associations between two sets of items, e.g., “flowers” with the word “good,” and “bugs” with the word “bad”—and then compares what happens when participants alternatively are asked to pair “flower” with “bad” and “bugs” with “good.” A difference in average matching speed for opposite pairings determines the IAT score. Participants are typically aware that they are making these connections but unable to control them given the rapid response times and structure of the test. More than 500 studies have employed numerous versions of the IAT and have found the results to be robust, especially for phenomena that are subject to social desirability. Translated to the measurement of racial discrimination, as per the illustration above, we had two sets of targets for the IAT. First, for discrimination against oneself, the measure—which we call the “IAT-p” (for person)—used the pronouns me, my, mine, them, their, and theirs. Second, for discrimination against one’s group—which we call the “IAT-g” (for group)—we used photos of black and white persons. For both measures, the attribute categorization words were: abuser, racist, bigot, target, victim, and oppressed. Using these measures, we could ascertain the differences in strength of association for being a perpetrator versus target of discrimination.

Source. Canevy et al. and Krieger et al.
discrimination, as one necessary contribution to the urgent work of promoting health equity.

About the Author
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References

Several aspects of social psychological science shed light on how unexamined racial/ethnic biases contribute to health care disparities.

Biases are complex but systematic, differing by racial/ethnic group and not limited to love-hate polarities. Group images on the universal social cognitive dimensions of competence and warmth determine the content of each group’s overall stereotype, distinct emotional prejudices (pity, envy, disgust, pride), and discriminatory tendencies. These biases are often unconscious and occur despite the best intentions.

Such ambivalent and automatic biases can influence medical decisions and interactions, systematically producing discrimination in health care and ultimately disparities in health. Understanding how these processes may contribute to bias in health care can help guide interventions to address racial and ethnic disparities in health. (Am J Public Health, 2012; 102:945–952. doi:10.2105/AJPH.2011.300601)

IN THE UNITED STATES, BLACKS, Latinos, and American Indians report and have more health problems than do Whites.1 Minorities also suffer much higher mortality rates than do Whites for many conditions. The mortality rate is 50% higher for Blacks than for Whites for strokes, prostate cancer, and cervical cancer.2 Moreover, the gap in mortality rates between Blacks and Whites for several illnesses (heart disease, female breast cancer, and diabetes) has significantly widened in recent years.3

Explanations for group health disparities often focus on structural factors, such as differences in socioeconomic status and access to health care.4 Although these and other factors contribute to health disparities, bias among health care providers also exerts an independent influence.5 In addition, patients’ responses to bias (e.g., mistrust6) or patients’ own biases may inhibit them from seeking medical care or reduce adherence to physicians’ recommendations.7 Biases can operate in unexamined but systematic ways—even among people committed by professional and personal values to helping others—to adversely affect medical decision-making, clinical interactions, and the responsiveness of patients.

Recent theoretical developments concerning the complex and subtle nature of racial and ethnic bias offer insights into current disparities in health care.8–10 Overall, racial/ethnic minorities receive poorer quality health care than do Whites in the United States,5 but disparities in health care are manifested in various ways. For example, Black patients are less likely than White patients to be recommended for surgery for oral cancers,11 and Latinos and Chinese women are less likely than are White women to receive adjuvant hormonal therapy, which decreases the risk for recurrence of breast cancer.12 Racial and ethnic minority patients are also more likely than are White patients to be recommended for and undergo unnecessary surgeries.13,14 In addition, for some conditions (e.g., prostate cancer for Asians and coronary heart disease for Latinos) minorities fare better than Whites.2

Psychologists have traditionally focused on processes common to bias toward various groups, but emerging trends emphasize important distinctions. In particular, the content of stereotypes differs systematically across groups, and consequently people’s emotional prejudices and behavioral responses vary across social groups.15 Moreover, prejudice and stereotypes do not have to be consciously endorsed to produce discrimination; people often respond automatically—frequently without awareness—to others’ race or ethnicity, activating stereotypical beliefs, emotional prejudices, and discriminatory tendencies (Figure 1).

These developments in social psychology have implications for understanding health care disparities and combating bias in health care.

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